

The minimal intersection numbers of loops on surfaces

Xuezhi Zhao

*School of Mathematical Sciences, Capital Normal University, Beijing 100048, P. R.
China*

Given two loops on a compact surfaces F , it is natural to ask: what is their minimal intersection number during homotopy classes? This number is usually said to be the geometric intersection number. In this talk, we shall explain an algorithmic treatment of such a problem: Determination of geometric intersection and self-intersection numbers of loops on surfaces. Some applications in geometric topology will be illustrated. Our integration have two parts: Nielsen fixed point theory and Gröbner-Shirsov basis. This talks includes a joint work with Gu, Ying.